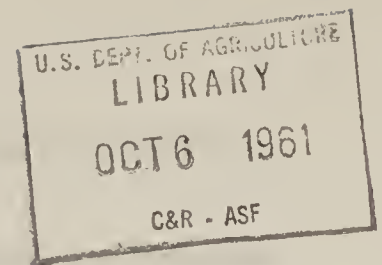


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UNITED STATES DEPARTMENT OF AGRICULTURE
Rural Electrification Administration
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Telephone Engineering Newsletter

Newsletters are intended to provide a means for answering questions that arise in the field and to inform the field of new developments. They are not intended to be instructions nor to replace in any respect the presently approved channels for establishing requirements and procedures.

TE and CM Sections Being Printed

- Add. 815 Cable Circuit Protection
- Add. 930 Use of Point-to-Point Radio in Telephony
- Add. 625 Open Wire Pole Top Assembly Units (giving application of T-18 and T-19 Reinforced Heavy Duty Point Type Transposition Brackets)

Long Span Insulated Aerial Wire Plant

A new concept in long span insulated aerial wire is being used at Tyler, Minnesota, in the system of the Tyler Telephone Company (Minnesota 580). The new concept consists in making the span lengths and wire attachment points on the poles such that when storm loaded the wires will touch ground in the spans before the wire tension exceeds 55% of rated breaking strength. The amount of ice loading on the wires to put them on the ground will vary with the span length and will bear no relation to the assumed NESC storm loading. Span lengths will vary greatly but will average more than 800 feet and the wire attachment points at poles will vary to give 14-foot midspan ground clearance at 100°F but allow the wire to touch ground when loaded to less than 55 percent. Service will not be affected when the insulated wires are on the ground. After the storm loading is removed the wires should return to approximately their original sag. This will lessen greatly the need for resagging. Storm damage to poles, crossarms and wires should be eliminated. The lines will be placed in service this fall and being in a known ice storm area the experience this winter should provide a prompt test of the plan.

Three different insulated wires are being used in various sections of the system. They are .080" - 20% copper-steel, .095" - 20% copper-steel and .109"-195 galvanized steel wire. They are insulated with polyethylene to a thickness of 15 mils. All three are high strength wires which permits the long spans. Staking lines under this concept requires selection of poles from 20 to 40 feet in length depending on the ridges or

depressions between poles, for which special staking tables were prepared. The special crossarms which are being used are bored with 16 inches between pin holes except for the pole pins which are centered 20 inches apart. Eight wires (4 circuits) are the maximum on one 5-foot crossarm and twelve wires (6 circuits) on one 8-foot crossarm. Every circuit will be transposed at every pole with certain omissions using point type transposition brackets which give uniform 4-inch wire separation in each circuit. Poles will be bored for three crossarm locations 2 feet apart. Crossarms will be attached in any one of the three holes as required by terrain conditions to give approximately the initial 14-foot mid-span ground clearance. Class 7 poles will be the minimum size used. Railroad, and main highway crossings will be held to a maximum of about 125 feet to ensure sufficient ground clearance under storm loading.

This concept is applicable primarily in areas of the country which are reasonably level, in which the number of control points is relatively few, where the number of subscribers per mile is few, where the roads are straight and where there are relatively few angles in the line. These are conditions that exist in many parts of the plain states.

Margin of Strength in Poles Supporting Multichannel Carrier Circuits

Attention is called to the requirement for a margin of strength of 1.33 for new poles when supporting multichannel carrier circuits. This calls for the use of Table 6 in REA TE and CM 611, Design of Pole Lines. The requirement is stated in paragraph 3.03 of Issue 2 of Section 611.

Use of Magnets to Hold Prints to CDO Frames While Doing Maintenance Work

A suggestion that magnets be used to hold prints to the metal of CDO frames has been submitted. Two magnets of the type used in receivers are sufficient to firmly support a print while it is being used in trouble clearing. This will avoid damage to prints laid on the floor and possibly being stepped on and dirtied or torn.

George E. Dodrill Resigns

Mr. Dodrill, Radio Engineer, has resigned and September 12 was his last day of duty with REA. He has accepted a position with the Atomic Energy Commission at its Washington, D. C., Headquarters.

Revision of Addendum to Form 511 for Buried Plant Construction

A revision to this addendum is under way and should be out about October 1, 1958.

Revision of REA Form 511 Under Way

Work is actively under way on the revision of Form 511. It is scheduled for issue January 1, 1959.

Project Status Reporting System

Staff Engineering of the Telephone Engineering Division inaugurated a Project Status Reporting System August 25, 1958. The system includes the use of Project Proposal sheets for approval by the Assistant Chief, Staff Engineering and Engineering Time Reports to show the time spent each day under seven categories, one of which covers approved projects each of which has assigned an identifying project number. The other six cover administration, leave, technical training, consultation and correspondence with manufacturers and suppliers, other consultation, correspondence and assistance, and standardization. Daily time sheets will be kept by each GS rated engineer and engineering technician in Staff Engineering. The time will be summarized every four weeks in a Project Status Report which will show the time spent to date and the man-hours estimated for completion of each approved project. The system is intended to provide information for administrative purposes and for budget preparation.

Revision of TE and CM Section 221, Assignment of Line and Station Numbers (TPL Systems)

The section is being revised to simplify the record work to make it applicable to offices with less than 450 linefinder terminals. It will specify use of but three records, making it suitable for record keeping by one person in an office.

General Electric Company Two-Way Radio Field Trial

Recently developed General Electric Company two-way radio is soon to be given a field trial in the system of the Delcambre Telephone Company, at Delcambre, Louisiana (Louisiana 518).

Kellogg K-31 Transistorized Subscriber Line Carrier Field Trial

A Kellogg K-31 transistorized subscriber line carrier installation was completed for field trial in July in the system of the Farmer's Mutual Telephone System, Strassburg, Virginia (Virginia 517). The equipment has four channels with built-in standby power supply, built-in compandors and built-in regulation. It is being tested for effects of lightning and temperature variations.

Stromberg-Carlson Transistorized Subscriber Line Carrier Field Trial

The Stromberg-Carlson subscriber line carrier field trial mentioned in Newsletter No. 16, August 1957, has now been in service about 14 months. Only two troubles have been experienced, both of which were relay troubles. This is transistorized carrier equipment at Montpelier, Virginia, in the system of the Merchants and Farmers Telephone Company (Virginia 507).

Lynch B620 Frequency Modulated Trunk Carrier Field Trial

A vacuum tube type frequency modulated trunk carrier designated as the B620 is being installed in the system of the Iowa-Illinois Telephone Company. This is not considered a field trial but is a regular installation. The novelty in it is in the fact that it is frequency instead of amplitude modulated.

Use of Interim Lists of Materials for Buried Plant Construction Being Discontinued

Instructions to consulting engineers and contractors are about to be issued advising them that items for use in buried plant construction must henceforth be taken from the "List of Materials Acceptable for Use on Telephone Systems of REA Borrowers." A supplement to this "List" is being printed which will include the items which have been approved by Committee A for buried plant use and will be available by the time the "instructions" mentioned are distributed.

Transistorized Ringing Generator

The transistorized ringing generator mentioned in Newsletter No. 18, May 1958, has not yet gone into service. The Murraysville Telephone Company (Pennsylvania 528) expects it to be received very soon from the Warren Manufacturing Company.